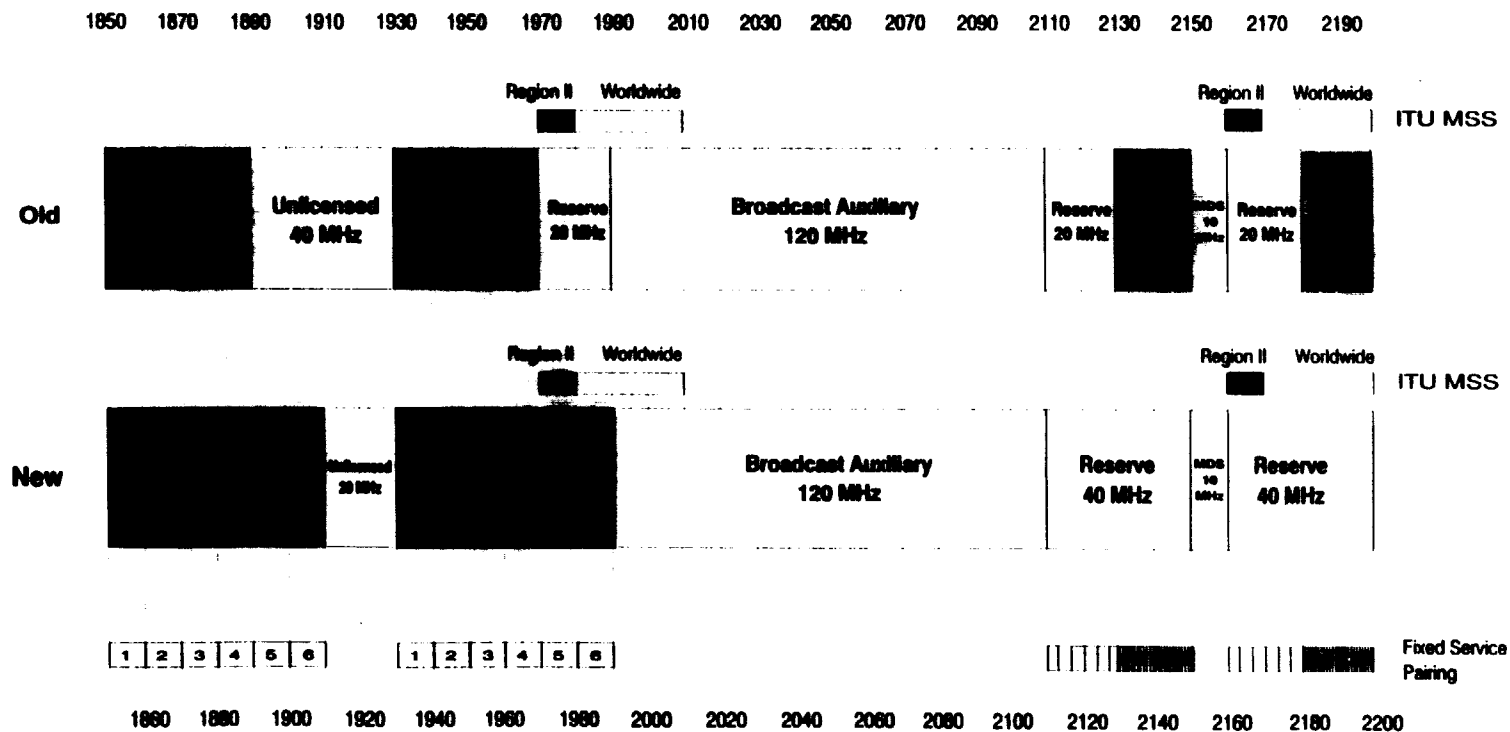


Broadband PCS Band Plan



Appendix E: A Procedure for Calculating PCS Signal Levels at Microwave Receivers

The new Rules adopted in Part 24 stipulate that estimates of interference to fixed microwave operations from a PCS operation will be based on the sum of signals received at a microwave receiver from the PCS operation. This appendix describes a procedure for computing this PCS level.

In general, the procedure involves four steps:

1. Determine the geographical coordinates of all microwave receivers operating on co-channel and adjacent frequencies within the coordination distance of each base station and the characteristics of each receiver, i.e., adjacent channel susceptibility, antenna gain, pattern and height, and line and other losses.
2. Determine an equivalent isotropically radiated power (e.i.r.p.) for each base station and equivalent e.i.r.p. values for the mobiles and portables associated with each base station. Determine the values of pertinent correction and weighting factors based on building heights and density and distribution of portables. Close-in situations, prominent hills, and extra tall buildings require special treatment.
3. Based on PCS e.i.r.p. values, correction and weighting factors, and microwave receiving system characteristics determined above, calculate the total interference power at the input of each microwave receiver, using the Longley-Rice propagation model.
4. Based on the interference power level computed in step 3, determine interference to each microwave receiver using criteria described in Part 24 and EIA/TIA Bulletin 10-F.

The interference from each base station and the mobiles and portables associated with it is calculated as follows:

$$P_{rbi} = 10\text{Log}(p_{tbi}) - L_{bi} - UC_i + G_{mwi} - C_i - BP_i$$

$$P_{rmi} = 10\text{Log}(n_{mi} \times p_{tmi}) - L_{mi} - UC_i + G_{mwi} - C_i$$

$$P_{rpsi} = 10\text{Log}(n_{psi} \times p_{tpsi}) - L_{psi} - UC_i + G_{mwi} - C_i$$

$$P_{rpbi} = 10\text{Log}(n_{pbi} \times p_{tpbi}) - L_{pbi} - UC_i - (BP_i - BH_i) + G_{mwi} - C_i$$

$$P_{rpri} = 10\text{Log}(n_{pri} \times p_{tpri}) - L_{pri} - (UC_i - BH_i) + G_{mwi} - C_i$$

where:

P refers to Power in dBm

p refers to power in milliwatts

- P_{rbi} = Power at MW receiver from ith base station in dBm
- P_{tbi} = e.i.r.p. transmitted from ith base station in milliwatts, which equals average power per channel x number of channels x antenna gain with respect to an isotropic antenna - line loss
- L_{bi} = Path loss between MW and base station site in dB
- UC_i = Urban correction factor in dB
- G_{mwi} = Gain of MW antenna in pertinent direction (dBi)
- C_i = Channel discrimination of MW system in dB
- P_{rmi} = Power at MW receiver from mobiles associated with ith base station
- P_{tmi} = e.i.r.p. transmitted from mobiles associated with ith base station
- n_{mi} = Number of mobiles associated with ith base station
- L_{mi} = Path loss between MW and mobile transmitters in dB
- P_{rpsi} = Power at MW receiver from outdoor portables (s for sidewalk)
- P_{tpsi} = e.i.r.p. transmitted from outdoor portables associated with ith base station
- n_{psi} = Number of outdoor portables associated with ith base station
- L_{psi} = Path loss between MW and outdoor portables in dB
- P_{rpb} = Power at MW receiver from indoor portables (b for building)
- P_{tpbi} = e.i.r.p. transmitted from indoor portables associated with ith base station
- n_{pbi} = number of indoor portables associated with ith base station
- L_{pbi} = Path loss in dB between MW and base station site (using average building height divided by 2 as effective antenna height)
- P_{rpri} = Power at MW receiver from rooftop portables (r for rooftop)
- P_{tpri} = e.i.r.p. transmitted from rooftop portables associated with ith base station
- n_{pri} = Number of rooftop portables associated with ith base station
- L_{pri} = Path loss in dB between MW and base station site (using average building height as effective antenna height)
- BP_i = Building penetration loss at street level in dB
- BH_i = Height gain for portables in buildings dB = $2.5 \times (nf-1)$, where nf is number of floors

Note: where C_i varies from channel-to-channel, which often is the case, the summation process is more complex, requiring summation at a channel level first.

Finally, the total PCS interference power at a given microwave receiver from all the base stations in a given frequency band is found by summing the contributions from the individual stations. Likewise, the total interference power at a given microwave receiver from all mobiles and portables operating in a given frequency band is found by summing the contributions from the mobiles and portables associated with each cell.

$$P_{rb} = \sum_i P_{rbi} \text{ milliwatts}$$

$$P_{rm} = \sum_i (P_{rmi} + P_{rpsi} + P_{rphi} + P_{rpi}) \text{ milliwatts}$$

$$P = 10 \log(p) \text{ dBm}$$

Base Stations. Interference from each base station to each microwave should normally be considered independently. A group of base stations having more or less (within ± 50 percent) the same height above average terrain, the same e.i.r.p., basically the same path to a microwave receiving site, and subtending an angle to that receiving site of less than 5 degrees, may be treated as a group, using the total power of the group and the average antenna height of the group to calculate path loss, L.

Mobile Stations. The e.i.r.p. from mobile transmitters is weighted according to the number of base station channels expected to be devoted to mobile operation at any given time. The antenna height of mobiles used in calculating path loss, L, is assumed to be 2 meters.

Portable Stations. The e.i.r.p. from the portable units associated with each base station is weighted according to the estimated portion of portables associated with that cell expected to be operated inside buildings at any given time and the portion which could be expected to be operating from elevated locations, such as balconies or building rooftops. For example, in the case of service intended for business use in an urban area, one might expect that perhaps 85 percent of the portables in use at any given time would be operating from within buildings and perhaps 5 percent might be operating from rooftops or balconies. The remaining 10 percent would be outside at street level.

Calculation of an equivalent e.i.r.p. for cells in suburban areas will involve different weighting criteria.

Urban Correction Factor. The urban correction factor (UC) depends on the height and density of buildings surrounding a base station. For the core area of large cities, it is assumed to be 35 dB. For medium size cities and fringe areas of large cities (4- to 6-story buildings with scattered taller buildings and lower buildings and open spaces) it is assumed to be 25 dB; for small cities and towns, 15 dB, and for suburban residential areas (one- and two-story, single family houses with scattered multiple-story apartment buildings, shopping centers and open areas), 10 dB.

The unadjusted urban correction factor, UC, should not be applied to base station antenna heights that are greater than 50 percent of the average building height for a cell.

Building Height and Building Penetration Factors. The building height correction, BH, is a function of the average building height within the nominal coverage area of the base station. It is used in conjunction with the building penetration loss, BP, to adjust the expected interference contribution from that portion of the portables transmitting from within buildings. The adjustment is given by:

BP = 20 dB in urban areas
BP = 10 dB in suburban areas

$$BH = 2.5 \times (nf-1) \text{ dB}$$

where nf is the average height (number of floors) of the buildings in the area.

(Note that this formula implies a net gain when the average building height is greater than 8 floors). All buildings more than twice the average height should be considered individually. The contribution to BH from that portion of portables in the building above the average building height should be increased by a factor of $20\text{Log}(h)$ dB, where h is the height of the portables above the average building height in meters.

Channel Discrimination Factor. A factor based on the interference selectivity of the microwave receiver.

Propagation Model. The PCS to microwave path loss, L, is calculated using the Longley-Rice propagation model, Version 1.2.2., in the point-to-point mode. The Longley-Rice [1] model was derived from NBS Technical Note 101 [2], and updated in 1982 by Hufford [3]. Version 1.2.2 incorporated modifications described in a letter by Hufford [4] in 1985. Terrain elevations used as input to the model should be from the U.S. Geological Survey 3-second digitized terrain database.

Special Situations. If a cell size is large compared to the distance between the cell and a microwave receiving site so that it subtends an angle greater than 5 degrees, the cell should be subdivided and calculations should be based on the expected distribution of mobiles and portables within each subdivision.

If terrain elevations within a cell differ by more than a factor of two-to-one, the cell should be subdivided and microwave interference calculations should be based on the average terrain elevation for each subdivision.

If a co-channel PCS base station lies within the main beam of a microwave antenna (± 5 degrees), there is no intervening terrain obstructions, and the power at the microwave receiver from that base station, assuming free space propagation, would be 3 dB or less below the interference threshold, interference will be assumed to exist unless the PCS licensee can demonstrate otherwise by specific path loss calculations based on terrain and building losses.

If any part of a cell or cell subdivision lies within the main beam of a co-channel microwave antenna, there is no intervening terrain obstructions, and the accumulative power of 5 percent or less of the mobiles, assuming free space propagation would be 3 dB or less below the interference threshold, interference will be assumed to exist unless the PCS licensee can demonstrate otherwise by specific path loss calculations based on terrain and building losses.

If a building within a cell or cell subdivision lies within the main beam of a co-channel microwave antenna, there is no intervening terrain obstructions, and the cumulative power of 5 percent or fewer of the portables, assuming free space propagation, would be 3 dB or less below the interference threshold, interference will be assumed to exist unless the PCS licensee can demonstrate otherwise by specific path loss calculations based on terrain and building losses.

References:

1. Longley, A.G. and Rice, P.L., "Prediction of Tropospheric Radio Transmission Loss Over Irregular Terrain, A Computer Method-1968", ESSA Technical Report ERL 79-ITS 67, Institute for Telecommunications Sciences, July 1968.

2. Rice, P.L., Longley, A.G., Norton, K.A., Barsis, A.P., "Transmission Loss Predictions for Tropospheric Communications Circuits," NBS Technical Note 101 (Revised), Volumes I and II, U.S. Department of Commerce, 1967.

3. Hufford, G.A., Longley, A.G. and Kissick, W.A., "A Guide to the use of the ITS Irregular Terrain Model in the Area Prediction Mode", NTIA Report 82-100, U.S. Department of Commerce, April 1982. Also, Circular letter, dated January 30, 1985, from G.A. Hufford, identifying modifications to the computer program.

4. Hufford, G.A., Memorandum to Users of the ITS Irregular Terrain Model, Institute for Telecommunications Sciences, U.S. Department of Commerce, January 30, 1985.

Appendix F

Permissible Ownership of PCS Licenses by the Owners of Same-Area Cellular Systems

(A same-area cellular system is one covering 10 % or more of the population within the PCS service area.)

Ownership Interest In Cellular License:	Permissible PCS Ownership:
Below 20 %	No special restriction. May own 100 % of PCS licenses totalling not more than 40 MHz of spectrum.
Designated entity with up to 40 % non-controlling interest in a cellular license.	No special restriction. May own 100 % of PCS licenses totalling not more than 40 MHz of spectrum.
Non-designated entity with up to 40 % non-controlling interest in a cellular license	May own a non-controlling interest in PCS licenses with up to 40 MHz controlled by a designated entity. (Assuming option to buy 10 MHz or 15 MHz not exercised)
All others	May own 100 % of PCS licenses totalling not more than 10 MHz for 5 years and 15 MHz thereafter.

Note All entities may have investments of less than 5 % in any PCS license without attribution.

**STATEMENT OF
COMMISSIONER JAMES H. QUELLO**

Re: Amendment of the Commission's Rules to Establish New Personal Communications Services, GN Docket No. 90-314.

Personal Communications Services (PCS) is a subject that has received a good deal of my time and attention. I have often reiterated my belief that the Commission must move forward as expeditiously as practicable to complete the reconsideration of the PCS rules so that we may begin licensing this family of advanced mobile communications services. The public interest is served best by having early access to an array of lower-cost, ubiquitous, location-independent communications.

I strongly support this Memorandum Opinion and Order. I want to congratulate Chairman Hundt for his leadership in bringing our efforts to closure and thank my fellow Commissioners for their invaluable contributions. I wish to commend the extraordinary efforts of the PCS Task Force and virtually all of the Commission staff in giving birth to a family of new mobile communications services known collectively as PCS.

I have long maintained that there is no "holy grail" of regulatory perfection. The "best rule" is the one that has been promulgated. Although I do not believe that any regulatory scheme can ever be "perfect," I do believe that this item is one of which we can be justifiably proud. It is the product of sustained hard work and thorough evaluation. The American public will benefit in many ways for many years to come by the action taken by the Federal Communications Commission in this proceeding.

Establishing the regulatory framework, while implementing a new licensing procedure mandated by Congress, for a major new communications industry such as PCS, is a complex and time-consuming task. I am convinced that the Commission staff, under the leadership of Chairman Hundt, has valiantly met the challenge. The Commissioners share the vision of a robust competitive new personal mobile communications industry that will benefit the American people in the very near future.

Although sixty-six petitions for reconsideration were filed, the number is deceiving because the parties essentially restated the positions they took during the notice and comment process. Little new information was presented. The Commission acted responsibly in empaneling the PCS Task Force to assist us in determining which issues merited reconsideration.

Through the efforts of the Task Force and extensive public commentary, the Commission was able to analyze the petitions thoroughly and find common ground for agreement in fine-tuning the plan adopted in the Second Report and Order. We are now able to turn our attention to the competitive bidding rules for broadband PCS and, shortly thereafter, commence the licensing process.

Prompt licensing of PCS meets the business needs of the potential competitors. They must know the "ground rules" so that they may finalize their business plans, complete market studies and technical trials, forge alliances, attract financing, establish standards and manufacture equipment.

We have responded by moving forward expeditiously. The Commission has adopted previously the generic competitive bidding (auction) rules and the regulatory framework for narrowband PCS. Today we take another significant -- and final -- step toward making PCS a reality. I am satisfied that the FCC is proceeding apace but we must not slacken our efforts; much work remains. We must resolve any issues and adopt the auction rules for broadband PCS in short order.

June 9, 1994

Separate Statement

of

Commissioner Andrew C. Barrett

Re: Broadband PCS Reconsideration Order

Our action today addresses the concerns I raised in my dissent with respect to the PCS allocations band plan adopted in September 1993. More than anything else, this reconsideration decision demonstrates: A. the policy vision necessary to permit the evolution of a viable, competitive PCS market; B. the potential synergies that can be created between various licensed PCS providers, and between licensed and unlicensed PCS providers; and C. the balanced analysis required to allow certain flexibility for cellular investment in PCS. My compliments to the Chairman, the PCS Task Force, and the Commission staff, on reconfiguring our PCS decision to give every potential new entrant a realistic opportunity to compete in our future wireless infrastructure. I fully support this decision, and look forward to addressing the remaining challenges with respect to our auction rules and the rules to promote real opportunities for designated entities to bid for and operate PCS licenses.

The three 30 Mhz allocations, two at the MTA level and one at the BTA level will provide significant opportunities for new entrants to compete against cellular providers and the emerging Enhanced Specialized Mobile Services [ESMR] market. This new framework achieves one of my policy goals of ensuring that at least 3 new PCS providers have a real opportunity to offer competitive alternatives to existing cellular players. In all three 30 Mhz licenses, new entrants have an opportunity to start service as soon as possible, while addressing the spectrum sharing or relocation issue with fixed microwave incumbents. Clearly, time to market will be critical for PCS to compete against the headstart of existing cellular and ESMR players. Our decision today will permit the rapid deployment of PCS services.

The 30 Mhz BTA allocation gives an opportunity for designated entities to raise capital and bid for a reasonably sized PCS license in over 490 markets throughout the country. The remaining 20 Mhz allocation for unlicensed spectrum will prove useful to portable data and voice applications. The potential licensed and unlicensed PCS synergies for portable voice applications could create additional exciting market developments. Our modification to unlicensed channelization requirements also will promote efficient spectrum uses in the 20 Mhz unlicensed band.

Although I was concerned about the usefulness and technical operation problems presented by the four 10 Mhz slivers adopted in the upper band [above 2 Ghz] of our September 1993 PCS Order, I am satisfied upon reconsideration that our three 10 Mhz BTA allocations in this Order are far improved for three reasons: 1. The technical equipment problem presented by dual-mode handsets operating between the upper and lower band has been eliminated--all 10 Mhz allocations are now in the lower band below 2 Ghz; 2. The three 10 Mhz allocations can be aggregated into 20 or 30 Mhz licenses at the BTA level in the lower band, thus creating the possibility of a fourth full-service PCS license in certain markets; and 3. The 10 Mhz allocations can be used as either niche services, with equipment that is also compatible in the larger 30 Mhz license areas, or can be combined in ventures with the larger 30 Mhz license areas to create 40 Mhz PCS operations for higher bandwidth requirements. These significant advantages outweigh my concerns about the efficacy of each individual 10 Mhz PCS license as a standalone operator.

Beyond the spectrum allocation and market size issues, I support our efforts to devise attribution rules which will promote a competitive PCS market. In combination with our 40 Mhz spectrum cap, these attribution rules should ensure that no undue influence can be brought to bear in the PCS licensing process by cellular entities in-market, or any other PCS licensee who would seek to circumvent our spectrum cap limit. In this regard, I also support our decision to impose a 35 Mhz spectrum cap on cellular for the first 5 years of PCS, and allow them to acquire an additional 5 Mhz to reach the 40 Mhz PCS spectrum cap after 5 years. Given the significant headstart of cellular entities, who have a cumulative capital investment of approximately \$10-12 billion dollars, and a cumulative revenue stream of approximately \$10-12 billion dollars, I am primarily concerned that new PCS entrants have a real opportunity to attempt to compete against such a market advantage. Further, given that cellular is experiencing customer growth in some areas of up to 40%, I believe new PCS entrants will have a significant hurdle to overcome by the time they introduce services in the market within 12-18 months after receiving a license in the auction. Thus, I support the more restrictive broadband PCS spectrum cap on cellular for 5 years.

Our decision also balances cellular eligibility with respect to the 20% equity ownership and 10% population overlap standard. While retaining this standard from the September 1993 Order, this Order makes several changes which support my views on allowing cellular to provide expertise in the PCS market under certain circumstances: 1. allow more flexible cellular non-controlling attribution in a PCS license owned by a designated entity, where a cellular entity owns a non-controlling in-market cellular interest of 40% or less; 2. allow more flexible cellular attribution for purposes of PCS licensing where a designated

entity, including rural telephone companies, owns a non-controlling in-market cellular interest of 40% or less; and 3. allow a cellular company with an attributable population overlap between 10 and 20% to divest enough cellular interests to solve the PCS in-market eligibility problem, by either selling cellular licenses to get below the 10% overlap standard, or selling enough of a cellular equity interest to get under the 20% equity attribution requirement in licenses causing the 10-20% overlap situation. These measured exceptions to our 20/10 attribution and overlap rules will promote cellular participation in limited circumstances.

This decision also emphasizes our serious concern that the PCS industry should move aggressively to adopt technical equipment and PCS operating standards that will permit interoperability among various type of PCS systems. Similar to the roaming requirements in the cellular industry, I am interested in ensuring that industry takes the lead to solve interoperability issues for the consumer before their services come to market. We are not dictating any single approach in this regard, only that the interoperability solution or solutions are sufficient to make differences between various types of PCS network configurations invisible to the PCS consumer.

Finally, the Order adopts more flexible power limit standards, 1000 watts E.R.P., and relaxes construction period requirements for 30 Mhz and 10 Mhz PCS licensees. I support these decisions, and believe they will give new PCS entrants an opportunity to deploy PCS infrastructure in an economic manner. Our subsequent auction Order for broadband PCS should address further issues regarding partitioning of PCS license areas for purposes of additional buildout flexibility.

Our decision today gives PCS a real opportunity to become a significant part of our future wireless infrastructure. The collective parts of this decision add up to an Order which thoroughly considers the various components necessary to make PCS a viable infrastructure alternative for future wireless consumers.¹ As I indicated in my prior dissent, our job is not

¹ In addition, this Order preserves the upper band above 2 Ghz for MSS worldwide allocations, and commits to a future proceeding to seek more MSS spectrum for domestic uses. This aspect of the PCS proceeding required significant consideration and analysis. In weighing the costs and benefits of implementing an integrated PCS allocation framework, I decided that the following benefits outweigh the costs of pursuing MSS spectrum needs in other proceedings: 1. the band plan in this Order creates opportunities for economies and efficiencies in equipment manufacturing for PCS services; and 2. this new band plan allows terrestrial PCS to create significant new economic activity in

to satisfy every lobbying effort from the multitude of interests involved in this complex proceeding; rather our job is to establish a framework for PCS based on the extensive record in this docket; a framework which will allow new PCS entrants to provide viable competitive choices for consumers. Today, we take that step. Our next challenge will be to implement auction rules that promote an efficient licensing process and give Designated Entities real, viable opportunities to participate in this major infrastructure opportunity. I look forward to working with my colleagues to resolve these issues and start the process of implementing PCS services in the U.S by the end of this year.

the near term, in terms of new businesses, new competitive service providers, and expanded opportunities for existing businesses.

SEPARATE STATEMENT OF COMMISSIONER SUSAN NESS

Re: In the Matter of Amendment of the Commission's Rules to Establish New Personal Communications Services--Memorandum Opinion and Order, Gen. Docket No. 90-314

With this historic decision, an important new sector of the telecommunications industry at last becomes a reality. The Personal Communications Service (PCS) should, in the short-term, prove to be a viable new source of competition to existing commercial mobile and private mobile radio services. In the not-too-distant future, PCS will be synonymous with feature-rich services beyond the imagination of today's consumers. It will also free subscribers from the limitations of the wireline network.

At the heart of today's decision is the modified bandplan. Consolidating and repositioning the PCS allocation at the lower end of the Emerging Technologies Band will eliminate the need for dual mode handsets, thereby hastening service deployment by as much as a year. Having fewer microwave incumbents in that spectrum should reduce the over-all costs of the PCS licensee. Grouping all PCS blocks together in the lower part of the band will encourage the creation of more competitive entrepreneurial niche services which could have been isolated in the upper band under the original plan. Equalizing the amount of spectrum allotted to the A, B and C blocks should make all three channel blocks attractive investment opportunities. Preserving a mix of blocks by geographic size and bandwidth will enable bidders to pursue a wide variety of visions and strategies for introduction of PCS. Finally, the revised plan will restore much of the global allocation for mobile satellite service.

By pausing briefly to reconsider the Second Report and Order in this proceeding, the Commission has forged ahead with a plan that better serves the public, enhances competition between existing mobile telephone providers and new entrants, encourages participation by a diversified group of new players, and furthers our global initiatives for mobile satellite services. Expediting the introduction of competition should help reduce retail prices and inspire a variety of new service offerings. Finally, the improved bandplan enhances the value of the spectrum and should result in a robust auction that will fairly compensate the public for the licensing of their scarce spectrum resource.

While I fully endorse the revised bandplan, I am concerned that the 20 MHz of "sweet spectrum" allocated to unlicensed PCS may be insufficient to fully accommodate the needs of both the data and voice users. I am intrigued by many of the potential applications for unlicensed PCS, and will be mindful of these uses when we address additional spectrum allocations in a future proceeding.

I applaud the Commission's PCS Task Force for achieving industry consensus on an issue that has been fraught with controversy. Indeed, the open exchange of ideas between the Commission and the industry that has characterized the PCS reconsideration should serve as a model for the agency's rule making and policy activities. Many staff members worked around-the-clock to deliver a final product that is thoughtful, complete, and fully supported by the record before us. Their hard work will enable us to move forward expeditiously with the broadband auction.

Now that this Commission has finalized many of the spectrum and licensing issues surrounding PCS, we will move immediately to establish procedures for auctioning broadband PCS before the year's end. Those wishing to give further thought to the broadband auction process will now have the final bandplan upon which to base their views. I fully appreciate the importance of maintaining our rapid pace towards the licensing and implementation of PCS, and I remain confident that our actions today are a timely affirmation of this agency's commitment to a strong and competitive PCS industry.

Chairman Hundt is to be commended for his skilled leadership and his willingness to take into account the various viewpoints that have been expressed during this proceeding. I feel very privileged to have arrived at the Commission in time to participate fully in this decision, which I wholeheartedly support.

SEPARATE STATEMENT OF
COMMISSIONER RACHELLE B. CHONG

Re: In the Matter of Amendment of the Commission's Rules to Establish New Personal Communications Services -- Memorandum Opinion and Order, Gen. Doc. No. 90-314

I am very pleased to support this item. I have been following the birth of this innovative wireless industry with great personal interest for some time. I believe that broadband PCS is going to introduce vigorous competition into the wireless telecommunications marketplace. This competition will bring many benefits to consumers. It will increase the consumer's ability to choose service providers. Moreover, increased competition should produce lower rates.

PCS will bring innovative communications services to the American public. PCS clearly is going to be more than just portable telephones similar to cellular phones. Portable lightweight PCS devices will allow us to utilize wireless technology to send faxes or transfer computer files, receive a written urgent message on a pager, or pull up news, stock quotes or sports scores no matter where we are. This surely will improve the quality of our lives and help us become more efficient and informed people. These innovative services will challenge other players in the wireless market to be just as creative in identifying new services that meet consumer needs.

I congratulate the many interested players in the PCS industry for their creative suggestions concerning the revised bandplan set forth in this decision. This is an excellent example of how many industries can work together to develop consensus and improve regulation. I am particularly pleased that this bandplan preserves spectrum designated for Mobile Satellite Service at the 1992 World Administrative Radio Conference. This, along with our commitment in this item to initiate a proceeding to allocate additional spectrum for MSS domestically and to work toward having additional spectrum allocated to MSS at the World Radio Conference in 1995, recognizes the importance of global communications and the leadership role of the United States in that arena.

I think that this bandplan is superior. It will result in less expensive and more lightweight handsets. It will provide two different spectrum sizes, so that PCS providers can bid for how much spectrum their proposed service actually needs, not amounts of spectrum that the FCC has guessed that they need. This bandplan will get PCS services to the public faster. Finally, I am pleased that we have committed in this item to look toward allocation of additional spectrum for unlicensed PCS operations.